

Remarks

Reconsideration is requested. Claims 12-29 are pending.

I. Claim rejections

Claims 12, 17 and 25-29 are rejected under 35 USC 103(a) as being unpatentable over US 1943914 to Flock in view of US 5860763 to Asplin.

In addition, claims 13-16 and 18-21 are rejected under 35 USC 103(a) as being unpatentable over Flock in view of Asplin and US 5795108 to Lightle.

Applicant respectfully traverses the rejections.

II. Claims 12-16

Claim 12 recites a feature not disclosed in Flock and Asplin, and not addressed in the rejection, and therefore a prima facie case of obviousness has not been established.

For example, claim 12 recites “lifting with air pressure, momentarily, said slab to a height above the desired final level”. Flock and Asplin do not teach or suggest lifting a slab to a height above the desired final level. As acknowledged in the rejection, at best Flock teaches lifting the slab to a height equal to the desired final level. However, raising the slab to a level equal to the desired final level is not what is recited in claim 12. Claim 12 explicitly states “above the desired final level”. There is absolutely no mention in Flock or Asplin of lifting the slab to a height above the desired final level. Nor does the rejection explain how this feature is met by Flock or Asplin.

For at least this reason, a prima facie case of obviousness has not been established. If the Examiner persist in this rejection, Applicant requests that the Examiner particularly point out how this explicit claim feature is met by Flock or Asplin.

In addition, Flock does not teach introducing compressed air and sand under the slab in bursts as recited in claim 12. The rejection appears to refer to page 2, lines 88-110 for a teaching of using compressed air. Flock does mention compressed air at page 2, line 92. However, the compressed air disclosed by Flock is used to operate the plunger 31 which drives material down into the ground. See page 2, lines 90-92. Flock does not disclose that the compressed air is mixed with the aggregate prior to being forced by the

plunger into the ground. Thus, Flock does not disclose a mixture of aggregate and compressed air.

Moreover, claim 12 recites “repeating said lifting and leveling steps”. The rejection simply asserts, without any support, that Flock teaches repeating lifting and leveling steps. However, Flock does not teach repeating lifting and leveling steps as claimed. Flock discloses two different embodiments, one in Figure 1 where filling material under pressure is introduced via a stem 9, and a second embodiment in Figure 4 where filling material is introduced via a reciprocating piston mechanism (column 3, lines 45+). Although it is not clear from the rejection, it appears that the Examiner is relying upon the embodiment in Figure 4 to teach the bursts recited in claim 12. The only repeating that occurs in Flock is with the embodiment in Figure 4 because of its reciprocation. However, the embodiment in Figure 4 does not utilize compressed air mixed with aggregate. Further, the embodiment in Figure 1 appears to operate continuously until the desired level is achieved.

Therefore, neither embodiment in Flock momentarily lifts the slab with air pressure, and repeats such lifting. Since the operation of the embodiment in Figure 1 is continuous, it cannot momentarily lift the slab. In addition, it is pure speculation as to whether the embodiment in Figure 4 creates any pressurized air that momentarily lifts the slab.

In fact, Flock discloses that the end of the stem 9 of Figure 1 needs to be inserted a proper depth into the ground. See page 2, lines 34-36. In addition, with respect to Figure 4, Flock states that the lower end of the tube is not inserted to as great a depth as was that of the stem. See page 2, lines 53-54. The implication of this later passage is clear - the lower end of the tube 17 in Figure 4 is inserted a certain depth into the ground, but not to the depth as the stem 9. Flock also states that it is the forcing of the filling material into the ground to react under pressure against the earth's subsoil. Page 1, lines 30-33. When the surrounding earth has reached a substantially incompressible state it will react against the subsoil and transmit the filling pressures to the lower side of the pavement. Page 2, lines 22-26. As illustrated in Figure 1 of Flock, it is actually the subsoil 5 that achieves the lifting, not the introduced aggregate.

From this disclosure in Flock, it is clear that air is not used to lift the slab. Moreover, it is not clear that air could be used in Flock as it is not clear that compressed air would achieve the filling pressures and subsoil reaction sought by Flock.

These deficiencies are not remedied by Asplin. Asplin teaches using mechanical jacks to lift the slab, and then filling the resulting cavity with sand. Asplin does not teach using air pressure to lift the slab.

For at least these reasons, claim 12 is patentable over Flock and Asplin. Claims 13-16 depend upon claim 12 and are patentable along with claim 12 and need not be separately distinguished. Applicant does not concede the rejections to claims 13-16.

III. Claims 17-21

Claim 17 recites a feature not disclosed in Flock and Asplin, and not addressed in the rejection, and therefore a prima facie case of obviousness has not been established.

For example, claim 17 recites “lifting with air pressure, momentarily, said slab to a height above the desired final level”. Flock and Asplin do not teach or suggest lifting a slab to a height above the desired final level. As acknowledged in the rejection, at best Flock teaches lifting the slab to a height equal to the desired final level. However, raising the slab to a level equal to the desired final level is not what is recited in claim 17. Claim 17 explicitly states “above the desired final level”. There is absolutely no mention in Flock or Asplin of lifting the slab to a height above the desired final level. Nor does the rejection explain how this feature is met by Flock or Asplin.

Moreover, claim 17 recites that the sand and compressed air are mixed in a mixing chamber which has a smaller air source hose fitted inside of a larger diameter sand outlet such that the smaller air source extends into the center section of the larger diameter sand outlet so as to create a venturi effect. The rejection is completely silent about this feature, nor does the rejection explain how this feature is met by either of Flock or Asplin.

For at least this reason, a prima facie case of obviousness has not been established. If the Examiner persist in this rejection, Applicant requests that the Examiner particularly point out how these explicit claim features are met by Flock or Asplin.

In addition, Flock does not teach introducing compressed air and sand under the slab as recited in claim 17. The rejection appears to refer to page 2, lines 88-110 for a teaching of using compressed air. Flock does mention compressed air at page 2, line 92. However, the compressed air disclosed by Flock is used to operate the plunger 31 which drives material down into the ground. See page 2, lines 90-92. Flock does not disclose that the compressed air is mixed with the aggregate prior to being forced by the plunger into the ground. Thus, Flock does not disclose a mixture of aggregate and compressed air.

Moreover, claim 17 recites "repeating said lifting and leveling steps". The rejection simply asserts, without any support, that Flock teaches repeating lifting and leveling steps. However, Flock does not teach repeating lifting and leveling steps as claimed. Flock discloses two different embodiments, one in Figure 1 where filling material under pressure is introduced via a stem 9, and a second embodiment in Figure 4 where filling material is introduced via a reciprocating piston mechanism (column 3, lines 45+). Although it is not clear from the rejection, it appears that the Examiner is relying upon the embodiment in Figure 4 to teach the repeating recited in claim 17. The only repeating that occurs in Flock is with the embodiment in Figure 4 because of its reciprocation. However, the embodiment in Figure 4 does not utilize compressed air mixed with aggregate. Further, the embodiment in Figure 1 appears to operate continuously until the desired level is achieved.

Therefore, neither embodiment in Flock momentarily lifts the slab with air pressure, and repeats such lifting. Since the operation of the embodiment in Figure 1 is continuous, it cannot momentarily lift the slab. In addition, it is pure speculation as to whether the embodiment in Figure 4 creates any pressurized air that momentarily lifts the slab.

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material into the ground to react under pressure against the earth's subsoil. Page 1, lines 30-33. When the surrounding earth has reached a substantially incompressible state it will react against the subsoil and transmit the filling pressures to the lower side of the pavement. Page 2, lines 22-26. As illustrated in Figure 1 of Flock, it is actually the subsoil 5 that achieves the lifting, not the introduced aggregate.

From this disclosure in Flock, it is clear that air is not used to lift the slab. Moreover, it is not clear that air could be used in Flock as it is not clear that compressed air would achieve the filling pressures and subsoil reaction sought by Flock.

These deficiencies are not remedied by Asplin. Asplin teaches using mechanical jacks to lift the slab, and then filling the resulting cavity with sand. Asplin does not teach using air pressure to lift the slab.

For at least these reasons, claim 17 is patentable over Flock and Asplin. Claims 18-21 depend upon claim 17 and are patentable along with claim 17 and need not be separately distinguished. Applicant does not concede the rejections to claims 18-21.

IV. Claims 22-24

Claims 22-24 have not been addressed in the office action. Nor has any explanation been provided as to how the features of these claims are met by Flock or Asplin.

Therefore, a prima facie case of obviousness has not been established.

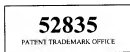
V. Claims 25-29

Flock and Asplin do not teach using a pressurized fluid to raise the slab to form a cavity, and introducing dried material different from the pressurized media into the cavity to at least partially fill the cavity.

Flock discloses that the introduced filling material causes the surrounding subsoil to raise the slab. See Figure 1. Flock does not use a pressurized fluid media for lifting, and a different dried material for filling. Asplin discloses using hydraulic jacks to lift the slab.

For at least these reasons, claim 25 is patentable over Flock and Asplin. Claims 26-29 depend upon claim 25 and are patentable along with claim 25 and need not be separately distinguished. Applicant does not concede the rejections to claims 26-29.

Reconsideration in the form of a notice of allowance is requested. If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, James A. Larson (Reg. No. 40,443), at (612) 455.3805.

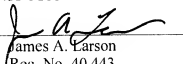


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Respectfully submitted,

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